December 17, 2003

<P>At approximately 13:04:10 UT on December 16, 2003 (8:04:10 a.m. local time), the Terra spacecraft transitioned to Earth-pointing Safehold mode. The event occurred out of contact and was detected by the Terra Flight Operations Team (FOT) at the beginning of the first contact subsequent to the Safehold event.</P>

<P>The spacecraft had exited the outer contour of the South Atlantic Anomaly several minutes prior to the Earth-pointing Safehold event. This outer contour defines a region of relatively low charged particle flux that affects Terra less severely than the area of higher charged particle flux within. Terra was over the northernmost portion of Antarctica (descending at about 650 south latitude and 650 west longitude) when the anomaly occurred. The spacecraft was in full daylight (moving toward a day-to-night transition) at the time of the anomaly.</P>

<P>Out-of-limit values were observed on all three axes (pitch, roll, and yaw) on both Inertial Reference Units (IRU) 2.5 seconds prior to Safehold. The Fault Detection, Isolation and Recovery (FDIR) software detected the Out-of-Limit values on the yaw rates, triggering the transition to Earth-pointing Safehold.</P>

<P><B>IMPACT ON PROGRAM/PROJECT AND SCHEDULE:</B>
There was no Health and Safety impact to the spacecraft or instruments. The transition to Earth-pointing Safehold terminates science data collection. The spacecraft attitude has been nominal while in Safehold. Instrument and subsystem temperatures and other key parameters are being monitored closely. However, Earth-pointing Safehold is well understood and the spacecraft can remain in the current mode while investigation of the anomaly proceeds.</P>

<P><B>CORRECTIVE ACTION:</B>
An Anomaly Team, led by the Terra Mission Director, has been formed and includes the Terra Flight Operations Team, instrument teams, instrument suppliers, and the spacecraft manufacturer. This team is continuing to collect information relevant to the anomaly and
will work to develop plausible causes and corrective action. The Earth-pointing Safehold
recovery has been performed on Terra on several previous occasions and is well understood.
However, no action will be taken until there is a better understanding of the problem.
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